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TRANSNATIONAL CORPORATIONS IN THE BAUXITE INDUSTRY IN GUINEA

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CHAPTER I

I. INTRODUCTION

1. Bauxite holds a special position among aluminium ores today because it lends itself well to processing. A very brief description of the bauxite-alumina-aluminium production sequence is given in Chapter II, which also surveys world bauxite reserves and world production of bauxite, alumina and aluminium from 1971 to 1980 by region. Over 70 per cent of primary aluminium production which depends on production of alumina and bauxite is concentrated in developed countries, especially in North America (37.7 per cent) and Europe (36 per cent), even though these regions possess minimal per centages of world bauxite reserves. The same situation applies to a lesser extent to alumina production: Africa, with 55 per cent of world bauxite reserves, accounted for 15 per cent, 2 per cent and 2.7 per cent respectively, of 1980 world production of bauxite, alumina and aluminium. An analysis of the 1971-1980 trend does, however, show a relative decline in the share of the developed countries of America and Europe in aluminium production and arise in the shares of Asia, South America, Africa and Oceania.

2. The dominant position of developed countries is confirmed in Chapter III which reviews ownership and control of production capacity at each stage of the bauxite industry. In 1982, the developed countries owned, either through private companies under their jurisdiction or through their governments, 95 per cent of world aluminium capacity, and 94 per cent and 81 per cent, respectively, of the alumina and bauxite capacities. The governments of the developing African countries hold minimal shares of 0.6 per cent, 0.9 per cent and 7.1 per cent, respectively, of world capacities in aluminium, alumina and bauxite. Six major transnational corporations (ALCOA, ALCAN, KAISER, REYNOLDS, PECHINEY and ALUSUISSE) have unique positions in the industry: together they own capacities of 44.5 per cent for aluminium, 50.4 per cent for alumina and 46.3 per cent for bauxite. Domination of the bauxite industry by a handful of transnational corporations with strong vertical and horizontal integration determines the structure of the bauxite, alumina and aluminium market, a situation which encourages the widespread practice of transfer pricing. The various types of contracts and prices are reviewed in Chapter III.

3. Chapter IV gives a brief history of the development of the bauxite industry in Guinea and studies in detail the semi-public companies, Friguia and CBG, in which transnational aluminium corporations in Guinea are involved.

4. Chapter V, describes the national policy for developing mineral resources and the basic principles governing semi-public companies in Guinea and examines distribution of gains between the government and its TNC partners. The trend in Government benefits shows that despite relatively advantageous investment agreements, in terms of earnings from taxes and dividends, the major increase in revenues came as a result of an Act creating the special export levy on mineral products and their derivatives. Factors strengthening and/or weakening

the Government's bargaining power with regard to sharing of benefits are discussed in the same chapter. Favourable factors include foresight of the Government during initial negotiations, gradual availability of qualified nationals experienced in conducting negotiations with transnationals, improvement in information and communications at the international level, especially within the International Bauxite Association, and quality and size of reserves of bauxite in Guinea. The main factor hindering government bargaining power relates both to lack of cohesion among countries hosting transnationals and TNC ability because of their world-wide network to juggle their short and long-term sources of supply in order to take advantage of differentials arising from differences in host country taxation.

5. The study draws a number of conclusions from these observations and outlines basic steps Governments must take in order gradually to improve their bargaining power through establishment of extensive communication and exchanges of experience among host countries in the appropriate forums.

CHAPTER II

II. THE BAUXITE INDUSTRY: REGIONAL SURVEY OF PROCESSING, RESERVES AND STATUS

A. Bauxite and aluminium production

6. Bauxite, which takes its name from the village of Les Baux-de-Provence in the south of France where it was discovered in 1871, is the most abundant and most suitable ore for the extraction of aluminium, given current production technology. Although it constitutes slightly over 7 per cent of the earth's crust, 1/ aluminium is only found in its natural state in the form of oxides, the reduction of which is particularly difficult. Aluminium oxide, called alumina, can most easily be extracted from bauxite; after electrolysis, alumina yields aluminium metal. In fact it is only in bauxite that alumina is found in a free state; other aluminous ores combine it with silica.

7. The name bauxite is generally applied to all sedimentary or residual rocks composed of hydrated alumina. Its formation is associated with the alteration of different types of rocks in a tropical or sub-tropical climate. Bauxites are common in lateritic zones or Karst sinks. In mineralogy, bauxites are divided into trihydrate bauxites or gibbsites and monohydrate bauxites, which are either boehmite or diaspore. There are in addition many mixed bauxites. The mineralogical type of bauxite directly influences alumina technology and production cost. A very brief summary of the processing of bauxite up to the

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1/ For purposes of comparison, The earth's crust contains 5 per cent iron, 2 per cent manganese and 1 per cent copper.

finished product follows.

8. Although undergrond mines exist, bauxite deposites are generally mined mechanically by quarrying: after stripping off the overburden which usually covers the deposits and varies in thickness from a few centimetres to several dozen metres, holes are drilled in the ore body and packed with explosives, and blasting breaks up the bauxite. (Some soft bauxites do not require blasting). The bauxite is then shovelled into trucks or railway wagons and is invariably crushed before export. Low-grade bauxites intended for export are enriched by washing, and those with high free-water content are dried before export: this is not done in the case of bauxites processed in situ into alumina.

9. The Bayer process, named after its inventor, is an alkaline technique introduced in 1892 and universally used today to extract alumina from bauxite. In the process, pulverized bauxite is leached with a solution of caustic soda, producing a pulp which is then subjected to heat treatment and, if necessary, to pressure. 2/ Under these conditions, the bauxite breaks down into a solution of sodium aluminate while the other undissolved constituents, particularly the iron oxide and most of the silicon, form an inert residue called "red mud". The sodium aluminate solution is diluted, decanted and filtered before entering separators where caustic soda is separated, leaving a precipitate of hydrated alumina. The latter is washed, filtered and then calcined, producing a white powder which is anhydrous alumina, generally called alumina. The recovered caustic soda is filtered, reconcentrated in evaporators and recycled, while the red mud is removed as waste.

10. Aluminium metal is obtained by electrolysis of alumina in "hots". A very strong direct current is passed through a solution of alumina in cryolite 3/ to cause the alumina to break down into aluminium and oxygen. The molten metal is deposited on the cathode at the bottom of the pot, and the oxygen is discharged at the anode on to carbon electrodes which are consumed in the course of the electrolysis to produce exides of carbon. The molten aluminium thus obtained is purified, combined with alloy metals if alloys are being produced, and then cast into ingots, wheets, billets and the like. Primary aluminium is generally 99.5 per cent pure, which is satisfactory for ordinary uses and for the fabrication of alloys. Greater purity is sometimes required for special applications. Super-purity aluminium is obtained by electrolytic refining of primary aluminium.

2/ Trihydrate bauxites are generally processed at atmospheric pressure, while monohydrate bauxites require higher pressure. The temperature required for processing the later is also higher.

3/ Cryolite, a salt of aluminium and sodium, lowers the melting point of alumina.

11. Given their properties, aluminium and its alloys lend themselves to countless metalworking processes, among them casting, laminating, stamping, chasing, wire-drawing, various types of tooling and jointing and surface treatments. This wide range of processes makes it possible to produce a huge variety of finished aluminium products, which are being used increasingly in construction, architecture, transport, electrical engineering, packaging, domestic appliances and so on.

12. The growing importance of aluminium in contemporary life and technology have caused bauxite - its principal ore - to be placed among the ten strategic raw materials in a study carried out at the request of the Government of the United States of America.

B. World-wide and African bauxite resources

13. Bauxite that can be economically exploited in prevailing technical and economic conditions contains a minimum of 30 per cent available alumina and a maximum of 10 per cent reactive silica. Computed on this basis, world reserves of recoverable bauxite according to the most recent (1977) estimates expressed in tonnes of dried bauxite are shown in Table 1.

14. The data show that Africa possesses 55.04 per cent of world bauxite resources, followed by the Americas (chiefly South America and the Caribbean) with 21.18 per cent, Oceania, led by Australia with 13.37 per cent, Asia with 7.41 per cent and Europe with 3 per cent. Africa's dominant position will no doubt be further consolidated when some very promising areas in both traditional bauxite countries (Guinea, Ghana, Sierra Leone) and new regions (Mali, Ivory Coast, Guinea-Bissau, Zaire, United Republic of Cameroon) are explored. Guinea, with 87.25 per cent of Africa's reserves and 48.02 per cent of world reserves, is incontestably the greatest reservoir of bauxite in the world; its leading position is even more noticeable in computations of equivalent of the reserves because of the high average quality of Guinean bauxite.

15. The geographical distribution of bauxite throughout the world is closely bound to climatic factors: indeed, virtually all world bauxite reserves are concentrated in zones which have a tropical or sub-tropical climate and in which alternation of two very distinct seasons, one dry and one rainy, and

Table 1. World Reserves of Recoverable Bauxite
(In Millions of Metric Tons, Dry)

Country	Measured Reserves	Hypothetical Reserves	Total Reserves
Africa			
Guinea	3.572	15.225	18.797
Cameroon	865	729	1.594
Ghana	381	401	782
Sierra Leone	130	8	138
Zaire	-	132	132
Guinea-Bissau	-	100	100
Sub-Total, Africa	4.948	16.595¢	21.543
The Americas			
Brazil	2.192	1.000	3.192
Jamaica	2.134	-	2.134
Guyana	678	1.142	1.820
Suriname	227	185	412
Venezuela	37	328	365
French Guyana	51	73	124
Costa Rica	-	109	109
Colombia	-	66	66
United States	45	-	45
Dominican Republic	17	-	17
Haiti	5	-	5
Sub-Total, Americas	5.386	2.903	8.289
Asia			
India	122	999	1.121
People's Republic of China	109	729	838
Indonesia	55	745	800
Turkey	21	70	91
Malaysia	14	36	50
Sub-Total, Asia	321	2.579	2.900
Europe			
Greece	119	324	443
Soviet Union	300	-	300
Yugoslavia	120	70	190
Hungary	117	48	165
France	29	-	29
Italy	29	-	29
Romania	20	-	20
Sub-Total, Europe	734	442	1.176
Oceania			
Australia	3.922	1.253	5.175
Solomon Islands	60	-	60
sub-Total, Oceania	3.982	1.253	5.235
WORLD TOTAL	15.371	23.772	39.143

Source: Bauxite throughout the world and its exploitation, International Bauxite Association (IBA), 1980; La bauxite en Guineé, Direction Général des Mines et de la Géologie, May 1982; Official communications; Les bauxites du Maymbe, (Bas Zaire), Service des Mines, November 1981.

existence of suitable leaching conditions have favoured their formation. This tropical and sub-tropical belt is composed largely of poor countries which possess neither financial resources nor technology and are numbered among the world's least developed countries. Disparity between natural resources and financial and technological means explains to a large extent the present structure of the bauxite industry and the geographical distribution of various processing sites.

C. World production of bauxite, alumina and aluminium

16. Aluminium production has a direct and recognized influence on the production of bauxite: demand for the former is a function of demand for alumina, which in turn depends on demand for aluminium, the latter being closely linked to the level of economic activity in consumer countries. The relationship between aluminium, alumina and bauxite production is therefore direct, although it may be modified by non-metallurgic uses of bauxite and alumina: about 10 per cent of world alumina production in 1980 was destined to special non-metallurgic uses while 11 per cent of bauxite was produced for purposes other than alumina production. This gives a total of 20-21 per cent of world bauxite production for non-metallurgic uses.

1. Bauxite

17. Tables 2, 3 and 4 respectively show world bauxite, alumina and aluminium production from 1971 to 1980. Table 2 indicates that the annual average compound rate of growth of world bauxite production was 3.6 per cent, rising from nearly 67 million tonnes in 1971 to almost 92 million tonnes in 1980. Africa's share went from 5.3 per cent in 1971 to 15.9 per cent in 1980 the highest in any continent for the decade. Guinea alone, with a production of 13.7 million tonnes in 1980 (36 per cent annual compound growth rate) accounted for 94 per cent of Africa's production.

Table 2 Bauxite Production by Region, 1971-1980
(In Thousands of Tonnes)

Country	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Africa										
Guinea	2630	2600	3800	7600	8406	11316	10871	11648	12199	13700
Sierra Leone	591	694	693	672	716	660	745	716	680	674
Ghana	329	340	355	363	325	268	235	340	251	197
Sub-Total, Africa	3550	3634	4848	8635	9447	12244	11851	12704	13130	14571
Americas										
Jamaica	12543	12989	13600	15328	11380	10296	11434	11736	11505	11991
Suriname	6718	7777	6976	6864	4751	4588	4951	5113	4741	4864
Brazil	566	765	849	859	969	998	1040	1131	1642	4151
Guyana	4234	3668	3621	3606	3828	[illegible]	3344	3479	3354	3052
United States	2020	1841	1909	1980	1800	[illegible]	2013	1669	1752	1617
Dominican Republic	1032	1087	1086	1196	785	[illegible]	772	757	521	510
Haiti	765	783	743	660	522	[illegible]	588	565	560	461
Sub-Total, Americas	27878	28910	28784	30493	24035	[illegible]	24142	24450	24075	[illegible]
Asia										
India	1517	1692	1251	1071	1274	1449	1508	1282	1934	1740
Peoples Rep. of China	550	550	700	800	900	1100	1200	1400	1500	1500
Indonesia	1238	1276	1229	1290	993	940	1301	1008	1093	1249
Malaysia	978	1076	1143	948	704	660	616	615	387	920
Turkey	153	471	352	665	558	463	567	449	157	417
Sub-Total, Asia	4438	5065	4675	4774	4429	4612	5192	4754	5071	5826

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Table 2 (Cont'd)

Country	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Europe										
USSR	7000	7400	7900	8400	6600	6700	6700	6700	6500	6500
Greece	2861	2409	2748	2783	3006	2551	2882	2630	2915	3286
Yugoslavia	1959	2197	2167	2370	2306	2033	2044	2566	3012	3138
Hungary	2090	2358	2600	2751	2890	2918	2948	2899	2976	2900
France	3184	3402	2970	2949	2563	2330	2059	1978	1970	1892
Romania	899	894	900	858	779	890	708	650	650	650
Italy	194	97	50	32	32	24	35	24	26	22
Spain	5	6	8	9	9	14	10	10	8	8
Sub-Total, Europe	18192	18763	19343	20152	18185	17460	17386	17457	18057	18396
Oceania										
Australia	12733	14437	17596	1994	21003	24085	26086	24293	27583	27178
WORLD TOTAL	66795	70804	75154	83912	77103	80460	84307	83520	87817	91621

Source: Metallgesellschaft "Metal Statistics, 1965-75",
WBMS "World Metal Statistics", January 1980-June 1981,
IBA Review, Vol, 5, No. 4, June 1980.

Table 3. Alumina Production by Region, 1971-1980 (In Thousands of Tonnes)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Africa										
Guinea	661	663	615	636	552	552	622	622	660	708
Americas										
United States	5938	6114	6662	6885	5135	6033	5960	6450	6450	6892
Jamaica	1876	2087	2505	2737	2242	1644	2048	2142	2074	2456
Suriname	1277	1378	1380	1185	1148	1024	1104	1260	1199	1329
Canada	1140	1149	1134	1265	1134	490	1061	1054	824	1202
Brazil	167	192	201	240	268	303	372	365	449	596
Guyana	305	265	269	316	294	285	277	240	280	214
Sub-Total, Americas	10703	11185	12151	12628	10221	9552	10895	11021	11276	12689
Asia										
Japan	1603	1644	1987	1801	1565	1411	1785	1767	18222	2218
People's Rep. of China	300	320	320	320	350	600	650	700	800	800
India	362	363	350	299	337	442	387	480	493	512
Turkey	-	84	109	123	82	139	170	74	75	137
Taiwan (province of China)	43	53	55	45	46	48	51	51	58	80
Sub-Total, Asia	2308	2464	2821	2588	2380	2640	3043	3072	3248	3747

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Table 3 (Cont'd)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Europe										
USSR ¢	2750	2850	3100	3300	3300	3200	3250	3300	3200	3200
Fed. Rep. of Germany	837	916	922	1302	1240	1331	1459	1555	1539	1608
France	1046	1112	1112	1108	1089	1013	1081	1221	1239	1339
Yugoslavia	123	126	275	273	283	451	503	448	838	1056
Italy	263	206	486	689	697	798	788	819	854	900
Hungary	467	520	655	691	756	732	786	785	818	813
Greece	464	466	470	498	475	462	474	478	496	505
Romania	220	200	282	274	400	425	442	449	500	500
United Kingdom	99	116	97	95	83	96	99	94	88	102
Czechoslaviakia	75	85	95	100	100	90	95	90	90	90
Spain	-	-	-	-	- -	-	-	-	-	62
German Dem. Rep.	47	45	47	48	48	44	39	38	36	47
Sub-Total, Europe	6391	6642	7541	8371	8471	8642	9016	9277	9698	110222
Oceania										
Australia	2713	3068	4089	4900	5129	6205	6660	6764	7416	7247
WORLD TOTAL	22776	24022	22217	29231	26840	27591	30166	30756	32298	34613

Source: Metallgesellschaft "Metal Statistics 1965-1975",
WMBS "World Metal Statistics", January 1980 to June 1981,
IPAI, Formulaire 650,
IBA Review, Vol. 5, No., 4, June 1980.

Table 4. Production of Primary Aluminium by Region, 1971-1980
(In Thousands of Tonnes)

Region	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Africa	191	232	249	278	272	337	367	336	401	37
Americas	4760	4856	5266	5710	4675	4801	5451	5822	6089	6 17
North America	4563	4647	5039	5454	4400	4485	5093	5409	5421	5 26
Latin America	197	209	227	256	275	316	358	413	668	21
Asia	1119	1304	1440	1463	1390	1365	1614	1511	1484	1 56
East Asia	931	1056	1149	1167	1061	963	1235	1126	1084	1 58
South Asia	188	248	291	296	329	402	379	385	370	98
Western Europe	2304	2518	2851	3150	3062	3150	3292	3345	3425	25 95
Oceania	246	293	324	330	323	372	393	414	425	450
Socialist Countries	2315	2445	2578	2885	3097	3179	3212	3332	3421	3422
WORLD TOTAL	10936	11649	12707	13816	12819	13204	14329	14750	15221	16027

Source: IPAI, Formulaire 150,
WBMS, "World Metal Statistics", January 1980 - June 1981,
IBA Review, Vol. 5, No. 4, June 1980.

1. Bauxite

18. The absolute value of production in the Americas - 41.7 per cent of world production in 1971 and 29.1 per cent in 1980 - has remained static with a slight decline - averaging 0.5 per cent per year. The production of the Americas is dominated by the Caribbean (49 per cent in 1980 as against 51 per cent in 1971) and South America (45 per cent in 1980 and 41.3 per cent in 1971). While the decline in the Caribbean countries has been uniform, this does not hold for South America: Suriname and Guyana recorded decreases in production, but Brazil's production grew spectacularly, at an average annual compound rate of 22.1 per cent. These differing trends are a consequence of the strategy of transnational corporations operating in these countries. Finally, the production of the United States of America, most of it located in Arkansas, has been declining steadily and in 1980 represented only 6.1 per cent of American and 1.8 per cent of world- production.

19. Asia, with a production which grew at an annual average rate of 2.8 per cent, just managed to retain its world share, which fell slightly from 6.6 per cent in 1971 to 6.3 per cent in 1980. Growth of production in China (10.6 per cent per year) and Turkey (10.5 per cent per year) enabled Asia to keep roughly the same share of production, with the levels of traditional producers such as India and Indonesia remaining static.

20. Production in Europe on the whole also remained static in absolute value, the result being a drop in its world share from 27.3 per cent in 1971 to 20 per cent in 1980. Production declined or remained static everywhere except Yugoslavia, which had an annual average compound growth rate of 4.8 per cent. It should be noted that the Soviet Union Yugoslavia, Greece and Hungary are the largest producers and together provide 86 per cent of Europe's production; the Soviet Union alone produces 35.3 per cent(1980).

21. After Africa, Oceania (Australia) recorded the strongest growth in bauxite production, from 19.1 per cent of the world total in 1971 to 29.6 per cent in 1980.

22. In summary world bauxite production was distributed as follows in 1980: Oceania, 29.6 per cent; Americas (chiefly South America and the Caribbean), 29.1 per cent; Europe, 20 per cent; Africa, 15.9 per cent; and Asia, 6.3 per cent. During the past decade, the shares of Africa and more so of Oceania have expanded at the expense of the Americas and Europe, while Asia's share has remained almost static. Judging from projects now under way, the drop in European production will continue in the short- and medium term. Africa and Asia will suffer a slight decline, with gains being made in Oceania and the Americas due to new and expansion projects in Australia and Brazil and better utilization of capacity in Jamaica and Suriname.

2. Alumina

23. With regard to alumina, the figures in table 3 show that world production increased at an average annual compound rate of 4.3 per cent during the past decade.

The continents whose production growth rate exceeded the average are Europe (4.8 per cent), Asia (5 per cent) and Oceania (10.3 per cent). Africa with a single alumina factory in Guinea recorded a compound growth rate of only 0.7 per cent per year, and its share of world production fell from 2.9 per cent to 2 per cent between 1971 and 1980.

24. Similarly, the Americas, dominated by the United States and Jamaica with, respectively, 53.3 per cent and 19.4 per cent of production in 1980, experienced a decline in share of world production from 47 per cent in 1971 to 36.7 per cent in 1980 owing to the very modest average growth rate of 1.7 per cent per year. There are however, disparities within this group: for example, Jamaica's average increase in production was 2.7 per cent whereas Brazil, a new producer, acheived an annual rate of 13.6 per cent.

25. With 10.8 per cent of world production in 1980 as against 10.1 per cent in 1971, Asia maintained and slightly improved its position. Production here is dominated by Japan (59.2 per cent), followed by the People's Republic of China (21.4 per cent) and India (13.7 per cent). China is the major producer and recorded the fastest rate of growth an annual average of 10.3 per cent.

26. Production in Europe is divided between The Soviet Union (31.3 per cent), the Federal Republic of Germany (15.7 per cent) France (13.1 per cent) and Yugoslavia (10.3 per cent). Europe's share of world production increased slightly, from 20 per cent in 1971 to 29.5 per cent in 1980. This rise is due to average annual growth rates of production during the decade in Yugoslavia (24 per cent), Italy (13.1 per cent) and Hungary (5.7 per cent).

27. The average growth rate of 10.3 per cent per year in Oceania's production enabled its share of world production to rise from 11.9 per cent in 1971 to 20.9 per cent in 1980.

28. The present world distribution of alumina production can be summarized as follows: Americas, 36.7 per cent; Europe, 29.5 per cent; Oceania, 20.9 per cent; Asia, 10.8 per cent; Africa, 2 per cent. In the short- and medium-term, Oceania and the Americas will again increase their shares of production, in view of new projects and expansion projects currently under way in Australia, Brazil and Venezuela and the higher ratios of capacity utilization which are bound to occur in Jamaica and Suriname. Africa's share will continue to decline until the beginning of the 1990s, when a major new alumina project will come on line. While Europe is almost certain to retain its share of production at least for the rest of the century because of expansions in Spain, Ireland, Italy, Yugoslavia and the Soviet Union, Asia is less certain to do so.

3. Aluminium

29. Table 4 shows an annual compound growth rate of world aluminium production of 3.9 per cent between 1971 and 1980. While the Americas, particularly North America, and Europe continue to dominate world production of primary aluminium, Africa and Oceania recorded the highest growth rates of the decade with 8.6 per cent and 6.5 per cent per year respectively.

30. The strong growth in production of primary aluminium in Africa should not hide the fact that its share in world production is still very modest at 2.7 per cent in 1980, as against 1.7 per cent in 1971. African production is concentrated in Ghana (45.7 per cent) and Egypt (22.9 per cent), with South Africa (18.3 per cent) and the United Republic of Cameroon (14.2 per cent) accounting for the remainder.

31. Despite a moderate growth rate of production of 3.2 per cent during the decade which reduced its share of world production from 43.5 per cent in 1971 to 40.8 per cent in 1980, the Americas remain the major world source of aluminium production. The United States and Canada account for most of the production of this region with 73 per cent and 17.5 per cent, respectively, in 1980. Asia, with 11.4 per cent of world production in 1980 as against 10.3 per cent at the beginning of the decade, has slightly improved its position. Japan (67.8 per cent) and India (19.2 per cent) account for the bulk of this region's production.

32. Having recorded the lowest growth rate in production during the past decade, Western Europe's share of world production has fallen from 21.1 per cent to 16.2 per cent. However, when account is taken of the European socialist countries where production grew at a more respectable rate, Europe as a whole accounts for 36 per cent of world production of primary aluminium in 1980.

33. Forecasts are unanimous, however, about the continuation of the decline in Europe's share of world production despite expected increases in capacity in the Soviet Union because of problems of industrial saturation, ecology and cost of energy. For the same reasons, North America's share will continue to decline, but the emergence of new producers such as Brazil and Venezuela in South America will enable the continent slightly to improve, or at least to maintain its position. Because Japan has cut its capacity, Asia will only be able to maintain its position through vigorous growth in production in the Arab Gulf countries with cheap energy resources. Oceania will probably maintain its share of production because of Japan's tendency to rely on Australia for much of its supply of primary aluminium. In view of the projects already under way throughout the world, Africa's share of primary aluminium production will probably be reduced during the present decade; however, expansion of capacity in Ghana and Cameroon and the coming on stream of major products in Zaire, Guinea and Nigeria will enable Africa to consolidate its position in the next decade.

34. Table 5 summarizes 1980 regional shares of bauxite reserves and bauxite, alumina and aluminium production. With 55 per cent of world bauxite reserves, Africa accounts for 16 per cent of world bauxite production, 2 per cent of alumina production and less than 3 per cent of aluminium production: with 0.1 per cent of world reserves, North America accounts for 23 per cent of world alumina production and 38 per cent of aluminium production. These two extreme situations exemplify the situation prevailing in the bauxite industry, with the developed countries of North America and Europe, which have virtually no bauxite, monopolizing almost all world production of primary aluminium.

Table 5. Distribution of world bauxite reserves and production of bauxite, alumina and aluminium, 1980

Regions	Percentage	Production Percentages		
	Reserves	Bauxite	Alumina	Aluminium
Africa	55.04	15.9	2.0	2.7
Americas	21.18	29.1	36.7	40.8
North America	0.11	1.8	23.4	37.7
South America and the Caribbean	21.07	27.3	13.3	3.1
Asia	7.41	6.3	10.8	11.4
East Asia	2.14	1.6	8.9	7.3
South Asia	5.27	4.7	1.9	4.1
Europe	3.0	20.0	29.5	36.0
Oceania	13.37	29.6	20.9	2.9

Source: Tables 1,2,3,4 Supra

CHAPTER III

OWNERSHIP, CONTROL AND MARKET STRUCTURE OF THE INDUSTRY

35. As far as geographical distribution of successive processing stages4/ is concerned, the bauxite industry is no different from other raw material processing industries in the world: the developing countries' role is confined to supplying commodities most of the processing and addition of value occurs in the developed countries.

36. As is the case with other raw materials, the situation with regard to bauxite results from factors relating to infrastructure, technology and trade proximity of consumption centres). In addition, the bauxite industry is highly capital- and energy-intensive, a fundamental characteristic at the aluminium stage. In the past, this has helped to accentuate polarization of the industry with location and mining occuring almost exclusively in developing countries and production of aluminium remaining a monopoly of developed countries, despite recent developments which give grounds to expect changes in the future.

37. The situation, already unfavourable for the countries which produce and export bauxite, looks even bleaker when ownership of the industry and degree of control exercised over it by the bauxite-producing countries are examined more closely.

A. Ownership and control of the industry

38. The outstanding structural characteristic of the bauxite industry is its domination by six transnational corporations, all with a high degree of vertical and horizontal integration. Using lists of electrolytic aluminium smelters and alumina refineries throughout the world drawn up by the United States Bureau of Mines (USBM) and data obtained from the secretariat of the International Bauxite Association, Table 6 breaks down ownership of world aluminium-, alumina- and bauxite-producing capacity in 1982.

39. The table shows that the six major TNCs Alcoa (USA), Alcan (CANADA), Kaiser (USA), Reynolds (USA), Pechiney (France) 5/ and Alusuisse (Switzerland) -- possess 44.5 per cent of world Aluminium production capacity, 50.4 per cent of world alumina production capacity and almost 47 per cent of world bauxite production capacity.

4/ From here on, the term "bauxite industry" will be used to cover both the mining of bauxite and its processing into alumina and aluminium.

5/ Although the Pechiney Ugine Kuhlmen (PUK) group was nationalized in 1982, we have for structural reasons kept it in the group of six.

The production capacities of other smaller transnational companies and private investors, that number approximately 50 are, respectively, 21.2 per cent, 21.7 per cent and 20.2 per cent. The governments of developed, capitalist and socialist countries together hold 29.3 per cent, 21.7 per cent and 14.2 per cent of world capacity in, respectively, aluminium, alumina and bauxite. The share left for the governments of developing countries is 5 per cent for aluminium, 6.3 per cent for alumina and 19.3 per cent for bauxite. Finally, in the last group respective figures for governments of developing countries in Africa are 0.6 per cent, 0.9 per cent and 7.1 per cent.

40. Tables 7, 8 and 9 detail the capacity of each group mentioned in table 6 with the exception of "other transnational companies and private investors" since there are so many of them and their individual capacity share are small.

41. These figures clearly demonstrate the very small degree of ownership and control held by developing countries, not only in the case of aluminium and alumina, but also in the case of bauxite, although most of the world bauxite capacity lies in their national territories. The developed countries, either through companies under their jurisdiction or directly through their governments, own close to 95 per cent of world aluminium and alumina production capacity and over 80 per cent of world bauxite production capacity. In this respect, Africa is in a worse position than Asia or South America.

42. As far as the governments of developing countries are concerned, the degree of control tends to be lower than that of ownership because of two factors:

(a) The widespread practice of management contracts which give transnational corporations most managerial functions although there are, in theory, directing and or control bodies (Joint Board of Director, Joint Technical Committee and Joint Ad Hoc Committee);

(b) The small size of domestic markets, which-often leads governments of developing countries to grant TNCs responsibility for external marketing of the industry's production, a task which would normally fall to the governments because of their shares in the industry.

43. The prevalence of transfer pricing in bauxite, alumina and aluminium marketing is a direct extension of the high degree of control exercised by a handful of highly-integrated transnational corporations.

Table 6. Ownership of World Aluminium, Alumina and Bauxite Capacities in 1982 (In Thousands of Tonnes)

	Aluminium		Alumina		Bauxite	
	Total Capacity #Owned	Percentage of World Capacity	Total Capacity Owned	Percentage of World Capacity	Total Capacity Owned	Percentage of World Capacity
The big six transnational corporations	7962	44,5	20113	50,4	51789	46,3
Other transnational corporations and Private investors	3801	21,2	8642	21,7	22606	20,4
Governments of Developed Capitalist Countries	1497	8,4	1571	4,0	323	0,3
Governments of Developed Socialist Countries	3730	20,9	7026	17,6	15600	13,9
Governments of Developing Countries	893	5,0	2523	6,3	21622	19,3
TOTAL	17883	100	39875	100	111940	100

Source: United States Bureau of Mines and International Bauxite Association.

Table 7. Alumina and Bauxite Capacities Owned by the Six Major Transnational Corporations in 1982 (In Thousands of Tonnes)

Corporation	Aluminium		Alumina		Bauxite	
	Total Capacity Owned	Percentage of World Capacity	Total Capacity Owned	Percentage of World Capacity	Total Capacity Owned	Percentage of World Capacity
ALCOA	1843	10,3	6562	16,5	17710	15.8
ALCAN	1748	9.8	3926	9.8	6361	5.7
KAISER	1293	7.2	3143	7.9	14615	13.1
REYNOLDS	1216	6.8	2756	6.9	5291	4.7
PECHINEY	1176	6.6	2362	5.9	2100	1.9
ALUSUISSE	686	3.8	1364	3.4	5712	5.1
TOTAL	7962	44.5	20113	50.4	51789	46.3

Table 8. Aluminium, Alumina and Bauxite Capacities Owned by Governments of Developed Countries in 1982 (In Thousands of Tonnes)

	Aluminium		Alumina		Bauxite	
	Total Capacity Owned	Percentage of World Capacity	Total Capacity Owned	Percentage of World Capacity	Total Capacity Owned	Percentage of World Capacity
Capitalist Countries	1497	8.4	1571	4.0	323	0.3
FRG	458	2.6	934	2.3	-	-
Norway	333	1.9	-	-	-	-
Italy	325	1.8	637	1.6	292	0.3
Spain	202	1.1	-	-	-	-
Austria	81	0.5	-	-	-	-
South Africa	54	0.3	-	-	-	-
Greece	44	0.2	-	-	31	0.0
Socialist Countries	3730	20.9	7026	17.8	15600	13.9
USSR	2916	16.4	3404	8.6	6500	5.8
Yugoslavia	254	1.4	1544	3.9	4800	4.3
Romania	203	1.1	508	1.3	1200	1.0
Poland	112	0.6	-	-	-	-
Hungary	93	0.5	828	2.1	3100	2.8
GDR	86	0.5	640	1.6	-	-
Czechoslovakia	66	0.4	102	0.3	-	-
TOTAL	5227	29.3	8597	21.7	15923	14.2

Table 9. Aluminium, Alumina and Bauxite Capacity of Governments of Developing Countries in 1982 (Thousands of Tonnes)

	Aluminium		Alumina		Bauxite	
	Total Capacity Owned	Percentage of World Capacity	Total Capacity Owned	Percentage of World Capacity	Total Capacity Owned	Percentage of World Capacity
P.R. of China	276	1.6	726	1.8	1500	1.3
Venezuela	175	1.0	510	1.3	-	-
Egypt	102	0.6	-	-	-	-
Bahrain	95	0.5	-	-	-	-
India	66	0.4	248	0.6	509	1.4
Turkey	61	0.4	200	0.5	700	0.6
Iran	48	0.3	-	-	-	-
Dubai	37	0.2	-	-	-	-
Brazil	33	0.2	20	0.0	1708	1.5
Guinea	-	-	349	0.9	7988	7.1
Guyana	-	-	360	0.9	4850	4.3
Jamaica	-	-	110	0.3	4367	3.9
TOTAL	893	5.0	2523	6.4	21622	19.3

B. Structure of the aluminium, alumina and bauxite markets

44. It is generally accepted that up to 80 per cent of primary aluminium production and 90 per cent of metallurgical bauxite and alumina production occur within integrated structures and are consequently subject to transfer pricing.

45. The transfer price may be defined as the accounting value assigned to a product when it moves from one tier of the structure to another for processing purposes. The tiers may be in the same region, the same country, even the same area or conversely may be on different continents, with the transfer consequently involving transport over distance which can be enormous.

46. The concept of a transfer price is difficult to define; there is a singular lack of information on how it is determined in relation to production costs on the one hand, and, on the other, to taxation practices in force in both exporting and importing countries. The ideal situation for application of genuine transfer pricing is the case of a private transnational corporation which is vertically integrated and acts alone in countries which use only the income tax system. In such conditions, the TNC can manipulate its transfer prices so as to minimize the tax owed on both sides. The classic instances of Jamaica and Guyana, where transnationals have for decades declared zero profits, exemplify the most accomplished use of transfer prices.

47. Changes which have taken place in the last two decades, particularly with regard to investment structures and sharing of ownership of bauxite production and processing plants, have in some cases attenuated the practice of transfer pricing in this pure form.

48. The continued growth in capital expenditures required in the development of new projects in the bauxite industry and the need to achieve economies of scale within ever larger capacities and to distribute risks among a larger number of partner corporations have led to the emergence of consortia made up of corporations that because of differences in the tax laws of their countries of origin, do not always use the same methods or the same strategy. Moreover, participation of local investors with no integrated structures and of host country governments give these two groups at least such rights of inspection as are necessary to secure some profits for themselves. Furthermore, unlike projects in the decade following the Second World War, which companies financed mainly from their own funds, new projects have and continue to call on banks, commercial or other, for increasingly large proportions of investment; as security for repayment, the banks demand firm, long-term contracts embodying price levels that ensure the project's profitability.

49. Two other factors which have certainly influenced the practice of transfer pricing in recent years are the double taxation law enacted in the United States of America and the institution of export levies by some governments of countries producing and exporting bauxite and alumina.

50. Despite this, the transfer price in all its variants continues to prevail in the aluminium, alumina and bauxite markets because of the high level of integration of the transnational corporations which dominate the bauxite industry. Since these corporations have virtual monopoly on primary aluminium production facilities and

on semi-finished and finished products, it is in their interest to transfer bauxite and alumina as far as possible at production cost, thus retaining profits themselves at the later stages of processing. The prices resulting from trade practices in the bauxite industry are briefly discussed below.

1. Pricing of primary aluminium

51. There are three types of price for primary aluminium: the posted price, the spot price and the contract price.

52. The posted price or market price is a producer's price published regularly on an f.o.b. or c.i.f. basis in trade publications such as Metal Bulletin or American Metal Market. There is no single posted price, each producer having his own market price. However, to date the "Alcan world price" published by Metal Bulletin for 99.5 per cent primary aluminium ingot has generally been accepted throughout the world as the reference price. There seems to be agreement that the posted price represents an estimate of the ruling price of the metal, or the price that would be used in arguing for installation of additional electrolytic capacity. This implies that the posted price is in all cases higher than the average production costs currently incurred by a specific producer for all his electrolytic plants.

53. The realised or spot price is a price applicable in open market transactions and is quoted in publications such as Metals Week. The London Metal Exchange (LME) also instituted in 1978 an aluminium contract (spot or three months'), and its quotations are published in most trade journals.

54. The relationship between spot and posted prices depends chiefly on the level of industry stocks of primary metal: this has led industrialists to describe all open-market quotations as parasitic speculation. The spot price is in fact higher than the posted prices when supply falls short of demand, causing a drop in the level of stocks. Conversely, the spot price goes below the posted price when stocks mount as a result of excess supply - for example, during an economic recession. Since the open market in primary aluminium is tight, experience gained up to now through the LME is insufficient to conclude that the spot price has had a significant impact on the pricing of primary aluminium; the experience acquired from the current crisis in the industry will perhaps allow for a different conclusion.

55. The contract price is an unpublished price fixed in contract of more than three months' duration for the supply by a producer of large quantities of primary aluminium to non-integrated consumers or consumers who do not produce enough metal themselves. Contracts of this type exist, for example, in the aeronautical, food, automobile and other industries. The level of the contract price lies between the posted and spot prices and depends on volume of deliveries and length of contract. In general, the larger those two factors are, the closer the contract price is to the posted price, and vice versa.

2. Pricing of alumina and bauxite

56. The international alumina and bauxite trade is conducted under four types of contract:

- Long-term, open-ended contracts concluded between subsidiary or affiliated companies of a single integrated system;

- Long-term contracts of specified duration concluded between partners in a joint venture;

- Special exchange or "swap" contracts;

- Open-market contracts.

The first two forms are the most common, since open market contracts for bauxite for example, cover only 15 to 16 per cent of world trade in this product. No published prices exist for alumina or bauxite as they do for aluminium: this is due not only to the competitive situation in a market where the number of consumers (alumina refineries and electrolysis plants) is relatively low and the lack of homogeneity of these products, but also and primarily to the structure of the industry.

57. In general, transnational corporations invest in mines and refineries not for the purpose of trading in bauxite and alumina, but in order to have an assured supply of these products, the added value of which is ultimately much lower than that of aluminium. Lack of homogeneity applies more strongly to bauxite than to alumina. While only two types of alumina - floury and sandy, 6/ which have virtually identically chemical properties - are distinguished the same is not true of bauxite, whose mineralogical and chemcial properties vary widely, thereby causing large variations in the processing costs incurred by refineries.

58. The prices in inter-subsidiary sales contracts are transfer prices, the level of which is set by the parent company, very frequently on the basis of tax circumstances. The prices in contracts between a production company and its partners are generally negotiated by those partners and determined, often with the consent of financing agencies outside the company, in such a way as to cover both operating costs and repayments on investment loans and the financing costs associated with them. When the host country government is a partner in this type of company, it does its utmost to increase its revenue by raising prices. In this situation, the interests of transnational corporations and host governments are in conflict; the outcome determines whether a project is implemented or shelved.

59. Swap contract prices probably correspond to the original prices of the products exchanged with allowances for adjustments to reflect any signficant difference in freight rate occasioned by a change of destination. Swap contracts

6/ A third, intermediate, type is also occasionally distinguished.

for alumina come about for instance, when one producer of primary aluminium who has floury-type alumina wants to use sandy-type alumina held by another producer of primary aluminium, possibly a middleman, who is prepared to purchase floury-type alumina. Occasionally, the same type of alumina may be involved with the exchange taking place because the electrolysis plant of the first producer is nearer to the source of alumina of the second, and vice versa. In this case, the swap is intended to minimize transport costs for both partners.

60. A typical case of a swap contract concerns the bauxite produced at the Sangaredi mine in Guinea, where Alcan is one of the foreign partners, and the Mokandji mine in Sierra Leone, which is wholly owned by Alusuisse. The ore extracted from the lower slopes of the Guinean mine has an increasingly high monohydrate content, which makes it unsuitable for processing in the Alcan refinery at Arvida, designed for bauxite with low monohydrate content. Alcan has consequently decided to divert the Guinean bauxite to a plant now under construction in Ireland, which uses suitable technology, and to other European plants that can process bauxite with a high monohydrate content. This is why Alusuisse obtains Guinean bauxite from Alcan in exchange for the 100 per cent trihydrate bauxite which it mines in Sierra Leone.

61. Prices in open-market contracts which form 15-16 per cent of all transactions, are set in conditions of open competition; they tend to be consistently lower than those in corporation partner contracts because of the relative over-capacity in the industry for both bauxite and alumina. Table 6 which takes into account average bauxite/alumina (2.32) and alumina/aluminium (1.95) conversion rates shows that bauxite capacity exceeds the requirements of alumina capacity, which in turn significantly exceeds that needed to supply the entire primary aluminium capacity. Under the circumstances, the consumer would benefit from obtaining his supply from the open-market only when the price it offers is attractive in the light of his own marginal costs for bringing capacity on stream.

62. Alumina and bauxite prices may be:

(a) Fixed, without monetary adjustment or revision clauses: this is the case with spot sales on the open market;

(b) Variable, in accordance with a fairly complex pricing formula which incorporates cost components (increases in which are reflected in the price through use of price indexes for inputs: industrial equipment, supplies, fuel, labour, etc.); profit components (determined by the producing company); and tax components (which depend on the host country government); these are described as "cost plus" prices and are standard practice in contracts between subsidiaries or between corporations and partners;

(c) Variable, in accordance with a formula of direct index-linking to the Alcan world price of primary aluminium ingot, for example, this price,

expressed as a percentage of the price per ton of primary aluminium, is now used quite often in open-market alumina contracts, including "third party sales" involving substantial quantities supplied over a relatively long period (1 to 3 years, renewable).

63. The invoiced price for bauxite is normally a base price which may be adjusted to take account of changes in certain consumer price indexes; it is always adjusted to take into account variations in the grade of the bauxite from the base grade specified in the contract. This base grade is generally defined by reference to alumina content (total or available), silica content (total or reactive), free moisture content and grain size (maximum and minimum). Premiums and penalities are set for each percentage point of deviation from the contract specifications (with the exception of grain size).

64. Because alumina is less heterogeneous than bauxite, premiums and penalties of this kind do not exist in alumina contracts. However, fines for damages, caused for example by unacceptable grain sizes for alumina are applicable in some cases.

3. Example of sales contract for bauxite

65. An example is given below of the structure of sales contracts, with particular reference to the price of metallurgical bauxite produced by the Compagnie des Bauxites de Guinée (CBG), currently the most widely-sold bauxite in the world (approximately 9 million tons per year).

(a) The contracting parties are CBG, a semi-public partnership between the Guinean Government (49 per cent shareholding) and each of the transnational corporations making up the HALCO consortium, on the one hand, and each of the transnational partner corporations on the other.

(b) Contracts have a duration of 20 years starting from 1967.

(c) The quantity of bauxite to be taken by each transnational corporation is specified for each year of the contract; it may vary, at the request of the transnational corporation, up to plus or minus 10 per cent, provided that the total quantity taken over 5 years does not vary by more than 5 per cent from the quantity specified in the contract for the same period.

(d) The base grade of bauxite is as follows:

Total alumina content: 58.5 per cent

Total silica content: 1.5 per cent

(Alumina and silica are indicative of the average grade of the deposit.)

(e) The base price is set in terms of technico-economic and financial data provided in the feasibility study.

(f) The adjusted or corrected price is the base price adjusted on the basis of:

(i) Guinean labour cost based on plus or minus $US 0.02 for each $US 1 increase or decrease in the average weekly cost per worker;

(ii) The average price per (US) gallon of 48-52 diesel fuel, f.o.b., Caribbean ports, at the rate of plus or minus $US 0.03 for each $US 0.005 increase or decrease in the price;

(iii) The average price per barrel of "bunker C", fo.ob. Caribbean ports, at the rate of plus or minus $US 0.01 for each increase or decrease in this average;

(iv) The wholesale price index for equipment published by the United States Bureau of Labour and Statistics, at the rate of plus or minus $US 0.025 per point above or below the base index.

These adjustments are calculated every six months, the base figures being the prices and indexes for 15 February 1967. They have caused the base price to double in 12 years.

(g) The adjusted price is itself further adjusted for premiums and penalities according to the actual grade of the shipped ore, plus or minus $US 0.30 per point of alumina above or below 58.5 per cent; $US 0.40 per point of silica above 1.5 per cent; and $US 0.10 per point of moisture content above 6 per cent.

(h) The final selling price invoiced is the sum of the adjusted price re-adjusted for the above-mentioned provisions and for the special export tax levied by the Government the bauxite-buying partners, not the semi-public company, pay the special export tax). Payment is made within 30 days after delivery. The terms of shipping - shipping schedule, notice of readiness, lay days, loading rate, additional lay days and demurrage, etc. - are an integral part of the contract, as is the standardized method by buyer and seller for the chemical analysis of bauxite samples.

66. A look at trends in recorded, but not published prices of transactions in recent years 7/ reveals that the nominal values of alumina and bauxite prices have greatly increased. While increases are in part due to inclusion of inflation factors in alumina and bauxite prices in pursuance of escalation clauses, their primary causes are rises in taxes levied by governments of producer countries. The increase in producer country revenues from the bauxite industry dates from the establishment of the International Bauxite Association (IBA) and with the exception of energy costs is the factor that has most heavily influenced prices in the bauxite industry over the past decade.

7/ Prices given in confidential reports of the member countries of IBA or cited unofficially by representatives of transnational corporations.

C. The International Bauxite Association and its impact on the bauxite industry

67. At a conference of the Organization of African Unity (OAU) held at Lagos in 1973, the Jamaican Minister for Mines and Natural Resources discussed possible co-operation among bauxite-producing countries, on the lines of OPEC, with the Guinean delegation. It was then agreed that consultations between the two countries should continue at appropriate levels. In September 1973, the Prime Ministers of Jamaica and Guyana briefly met the President of Guinea at Conakry to discuss the issue further. A conference, originally suggested by Guinea, and attended by Australia, Guinea, Guyana, Jamaica, Suriname and Yugoslavia was held from 29 October to 3 November 1973. It drafted a charter that was finalized at the IBA Constituent Conference, held from 3 to 8 March 1974 at Conakry.

68. IBA's objectives, 8/ which are consistent with the movement initiated in the early 1970s to establish a new international economic order, are:

- To promote the orderly and rational development of the bauxite industry;
- To secure fair and reasonable profits for member countries in the exploitation, processing and marketing of bauxite and its derivatives;
- In general, to protect the interests of member countries vis-à-vis the bauxite industry.

69. Sierra Leone joined the Association in 1974, during the Constituent Conference itself, and was followed, in 1976, by the Dominican Republic, Haiti and Ghana in 1975 and, lastly, Indonesia, bringing the number of member countries to 11.

70. Only 36 per cent of the world's alumina and 72 per cent of the world's bauxite are produced in the national territories of the IBA member countries, but they are the source of over 90 per cent of the bauxite 9/ and over 80 per cent of the alumina involved in world trade. This situation has enabled the Association - not as a collective entity but because of the individual decisions taken by its members - to have considerable influence on the prices of bauxite and alumina. 10/ In fact, following the example of Jamaica in 1974, Guinea, the Dominican Republic, Haiti and Suriname have instituted taxes either on production or on exports which have considerably increased their revenues. These new taxes, treated by transnational corporations as cost components, have brought about a general rise in bauxite and alumina prices, so that even those countries which had not imposed such levies were able to increase their tax revenue by demanding higher prices. Australia for instance, has instituted an export control system that requires government approval of contract prices for

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8/ From the statute of the Association.

9/ Aluminium and Bauxite, Hashimoto, World Bank, March 1979.

10/ Statement by the Deputy Prime Minister of Australia on 24 October 1978, in the House of Representatives.

bauxite and alumina; the aim is to ensure that the prices obtained by companies based in Australia are "fair and reasonable" 11/ before the final contracts are signed.

71. Although improved earnings for member countries is one of the Association's chief assets, its greatest contribution has undoubtedly been information. Information disseminated through IBA has enabled a number of member countries successfully to conclude negotiations with transnational corporations on such matters as additional taxes. The information resulting from sharing of ideas and experiences between member countries and the technical, economic and financial data compiled by the Association's secretariat have helped a number of member countries to improve their negotiating positions vis-à-vis the transnationals with regard to both the pricing of present production and the development of new projects.

72. Despite difficulties inherent in any organization whose members' political orientations differ and in which conflicts arise at times because of competition for new investments, IBA has been able to survive despite TNC predictions of collapse and is viewed today as a responsible and credible organization. The Association's credibility is illustrated by achievements of the International Conference on Bauxite in December 1980 in Jamaica: representatives of the major transnational corporations in the bauxite industry agreed to meet the IBA member countries at this conference to discuss, inter alia, exchanges of information, integration of the bauxite industry in producer countries, participation of producer countries in the shipping of bauxite and transfer of technology. The success of the Conference led participants to propose that a second meeting be convened (it is planned for 1983), a fact that attests to the Association's mature perception of the bauxite industry's problems.

CHAPTER IV

TRANSNATIONAL CORPORATIONS IN THE BAUXITE INDUSTRY IN GUINEA

A. Development of the bauxite industry in Guinea

73. The existence of bauxite in Guinea was recorded as early as 1819, when samples collected in the Boke region by two French prospectors were studied at the Ecole Royale des Mines in Paris. It was not until the twentieth century, however, that the bauxite deposits in Guinea were explored more thoroughly, particularly in the Boke region by Alcoa Company representatives in 1920, and from 1937 onwards, in the Loos Islands of Kassa and Tamara by the Alcan company; through its French subsidiary, Les Bauxites du Midi, the latter was authorized by the colonial Government of the time to exploit the small deposits on the Loos Islands.

74. In 1949 Les Bauxites du Midi shipped a 300-ton industrial sample of bauxite from Tamara; it chose Kassa Island as its base of operations and installed mining equipment there between 1948 and 1953, when exports of Kassa bauxite began. The facilities, which at their peak produced 540,000 ton of washed and dried bauxite a year, were nationalized in 1961, after the country's accession to independence in 1958. A major factor in the nationalization arose as a result of a dispute between the new Government and Les Bauxites du Midi over the development of the Boke project.

75. Between 1948 and 1961, Les Bauxites du Midi had conducted geological surveys of the Boke region bauxites as well as studies on their mining and processing into alumina; findings had determined that the mine had an annual capacity of 1.5 million tonnes and recommendations suggested an alumina refinery with an ninitial annual capacity of 220,000 tonnes. For three main reasons -- France's breach with Guinea at independence, the creation of the Guinean national currency in 1960 and the French Government's subsequent withdrawal of all guarantees given to investment companies in Guinea -- Les Bauxites du Midi shelved the development of the Boke project - half of its alumina capacity had already been cancelled. Having failed to induce Les Bauxites du Midi to continue the Boke project, the Government suspended all the company's activities in the national territory. The Kassa operation, nationalized in 1961, functioned with help from Hungarian technicians until 1966 when reserves were exhausted. The production, which had by then declined, was sent primarily to the socialist countries of Europe.

76. Two other groups were involved in prospecting in the bauxitic plateaux of the Kindia and Fria regions: the Alais, Friges and Camargues company and the Societe d'Electrochimie, d'Electrometallurgie et des Acieries Electriques d'Ugine from 1942 onwards; and Sarepa, a subsidiary of Pechiney-Ugine from 1951 to 1957.

77. Against that background, a consortium of companies, called Compagnie Fria, headed by Pechiney and Olin Mathieson (later replaced by Noranda) signed a long-term investment agreement on 5 February 1958 with the colonial Government: the Compagnie Fria was authorized to exploit the bauxite deposits in the Fria region and locally to process the bauxite into aluminium, using hydroelectric power from the Konkoure River which flows through the area. Construction work, started in that year, was too advanced to be stopped when the country acceeded to independence on 2 October 1958. However, implementation of the Konkoure hydroelectric project, for which studies had been completed, and of the aluminium phase of the Fria project were cancelled. Since the new Guinean Government had undertaken not to repudiate the agreement signed by the colonial power, the Compagnie Fria operated in its original form until 1973, when the company itself asked that its articles of of association be changed to those of a semi-public company. The Guinean Government is a partner in the new company, Friguia, as well as in the Compagnie des Bauxites de Guinee (CBG), which had started production in August of the same year.

78. Following independence, the new Government endeavoured to reactivate the Boke project, which had been abandoned by Les Bauxites du Midi. The French Government's efforts to isolate Guinea made it difficult to attract partners. In October 1963, however, the Guinean Government concluded an agreement establishing the semi-public CBG with a small United States company, the Harvey Aluminium Company; the Government held 49 per cent of the shares. The immediate aim was to mine and export bauxite from the Boke region, local processing into alumina being postponed until a later stage. After initial studies had been carried out and in view of the progress of the project, the major transnational aluminium corporations including Alcan, Alcoa, Pechiney and Alusuisse, bought up the shares held by Harvey in 1967, thus causing CBG to be restructured and the production target raised. With loans from the World Bank and USAID, the Guinean Government completed at its own expense basic infrastructure for the project including port, mine-port railway and part of the workers' housing. At present the Sangaredi mine, operated by CBG, is the largest bauxite mine in the world.

79. Harvey had been authorized until such time as the Boke project went into production to operate the Tamara bauxite mines; these reserves, which totalled approximately 5 million tonnes, were worked from 1967 to 1972, when the mines were closed and the employees transferred to the Boke project which was then under construction.

80. Simultaneously with the development of the Boke project, the Government established in November 1969 a state-owned corporation, the Office des Bauxites de Kindia (OBK), to mine and export bauxite of the Kindia region. The Soviet Union was responsible for financing and constructing this project, which began production in September 1974.

81. Completion of all these projects has enabled Guinea in the space of one decade to rank in 1980 as the world's second largest producer of bauxite, after Australia and slightly ahead of Jamaica.

B. Profiles of bauxite mining companies in Guinea: involvement of transnational corporations

82. The discussion here is limited to the semi-public companies, CBG and Friguia, in which transnational aluminium corporations are partners.

83. The distribution of capital in these companies between the consortium of foreign partners (51 per cent) and the Government (49 per cent) constitutes a legal constraint imposed primarily to please the financial backers both in the initial construction phase and in the capacity-extension phase; the latter want to be certain that the transnational partners have formal control of the semi-public company and thereby to safeguard the operational results out of which the loans are paid.

1. Profile of Friguia

84. The following summarizes the characteristics of this company:

(a) Registered capital — US$ 2,440,000

(b) Alumina capacity:

at the initial stage in 1960	480,000 tons/year
expanded in 1970 to	700,000 tons/year

(c) Shareholders:

Frialco, which includes	51 per cent
Noranda (USA), 21 per cent;	
Pechiney Aluminium (France), 17 per cent;	
British Aluminium (UK), 5 per cent;	
Alusuisse (SWI), 5 per cent;	
VAW (FRG), 3 per cent;	
Government of Guinea	49 per cent

(d) Investments: a total of US$440 million, financed jointly by the private-enterprise partners and the Caisse Centrale de la France d'Outre-Mer; these investments have funded construction of the industrial infrastructure for the alumina plant, a port for the mine, 145-kilometre railway, a housing estate comprising 1,500 dwellings, a training centre and social facilities (hospital, recreation centre and so on).

(e) Personnel: a total of 1,966 permanent employees, including 60 expatriates; payroll for Guinean employees in 1981 totalled $US6,928,000.

(f) Management: Friguia has a technical assistance contract with Pechiney Aluminium, which provides supplies for the plant, senior technical staff, vocational training, and so forth.

(g) Financial situation in 1981 12/

Net sales (NS)	$US 126,064,830
Net earnings (NE)	$US 8,290,644
Earnings per share (NE/50,000)	" 166
Return on investment (NE/I)	19.87%
Net earnings as % of sales (NE/NS)	6.58%

2. Profile of CBG

85. The following summarizes the main features of CBG.

(a) Registered capital $US 2,000,000

(b) Capacity:

Metallurgical bauxite	9,000,000 tons/year
Calcined bauxite, as abrasives	120,000 tons/year

(c) Shareholders

Halco (Mining) Inc., comprising Alcoa (USA), 13.77 per cent; Alcan (Canada), 13.77 per cent; Martin Marietta (USA), 10.20 per cent; Pechiney (France), 5.10 per cent; VAW (FRG), 5.10 per cent Aluminio Italia (Italy) 13/, 3.06 per cent	51 per cent
Government of Guinea	49 per cent

12/ Source: Data extracted from consolidated financial statements, certified by Price Waterhouse.

13/ The initial partner was Montedison, which was replaced by the State-owned corporation Alumetal in 1967. In May the latter merged with the Alsar Company, itself owned by the State-owned corporation IRI. In the meantime, Alsar's name has been changed to Aluminio-Italia s.p.a.

(d) Investments: a total of $US 384 million, financed by Guinea ($US110 million from World Bank and USAID loans guaranteed by the foreign partners), by the foreign partners ($US45 million) and by commercial loans ($US229 million), also guaranteed pro rata by each of the partners; these investments have funded the construction of the basic infrastructure, owned by the Government and including port, 140-kilometre railway, housing estate of 1,000 dwellings and the industrial infrastructures at the mine and terminal.

(e) Personnel: 1,900 permanent employees, including the personnel to operate the basic infrastructure, of whom 163 are expatriates; in 1981 payroll for Guinean employees amounted to $US8,164,700.

(f) Management: CBG has a management contract with Halco, which has designated Alcoa as operator, under which Halco furnishes supplies, provides senior technical staff and handles the recruitment of expatriate staff, occupational training, and so forth.

(g) Financial situation in 1981 14/

Net sales	$US190,895,096
Net earnings (NE)	72,155,298
Earnings per share (NE/100,000)	721.55
Return on investment (NE/I)	41.34%
Net earnings as % of sales (NE/NS)	37.8%

14/ Source: Data extracted from the final 1981 statement for tax purposes, certified by Cooper and Lybrand.

CHAPTER V

DISTRIBUTION OF BENEFITS FROM THE BAUXITE INDUSTRY

86. Examination of the distribution of benefits between the Government and the transnational partners in semi-public companies requires a brief analysis of the framework within which they were established and the basic principles according to which they operate.

A. National policy for mineral resources development

87. National development in general and the development of the mining industry in particular require substantial financial and technological resources which cannot at present be mobilized in the country itself. There is therefore a need for external financing, and the Government has been actively encouraging this since the early years of independence through a number of provisions which together form the 1963 "Investment Code". The Code defines and specifies conditions and terms for investment and requirements for companies and enterprises seeking authorization to operate in Guinea.

88. The Investment Code lists six categories of priority enterprises: the mining and ore enrichment or processing industries rank second after mechanical or chemical preparation and processing industries. This is because of Guinea's development strategy policy, which treats agriculture - one sector employs over 80 per cent of the population - as the basis for development and the mining industry as the catalyst for the former.

89. Under the provisions of the Investment Code, any foreign company seeking to exploit a mineral resource in Guinea must, in order to be approved, become a partner of the Government in a semi-public corporation and commit itself to a specific deadline for embarking on more advanced processing of the product. Transfer by the Government of the right to exploit the mineral resource and other concessions make up its share of the registered capital of the semi-public corporation; the foreign partners contribute their share in cash.

90. All investments approved under the Investment Code benefit from tax exemption or relief. All capital goods and raw materials needed for the construction phase (infrastructural work, assembly) and the extension share are imported free of customs duty and other charges normally levied. In the start-up phase, from two to seven years after production begins, import duty on capital goods, tools, spare parts and quarrying machinery and vehicles is reduced by a rate set forth in the Agreement establishing the semi-public corporation. Raw materials and semi-finished products imported during this phase are exempt from all duties and charges. During the full production phase, raw materials used directly in the production process, machines and spare parts, quarrying machinery and vehicles and locomotives - all of which are on a list agreed by the parties - are subject to an agreed tax, whereas other items are taxed at the standard rate.

91. The Investment Code also lays down amortization conditions and transfer rules, together with guarantees relating to the production and security of foreign capital invested in Guinea. With regard to transfers, it should be noted that foreign shareholders in semi-public corporations may transfer all their dividends tax-free.

92. The Investment Code was revised in February 1980 to adapt it to new national imperatives; to encourage investments that are likely to generate substantial revenue for the country; and further to liberalize the status of mining companies. The two most significant amendments are:

- placing mining industries at the top of the list of approved priority enterprises;
- abolition of the obligation for foreign companies to become partners with the Government in a semi-public company; such partnership is still desirable but not mandatory.

93. The Govenment's main concern is to create a lasting relationship with foreign partners, characterized by healthy and honest co-operation. This can safeguard the Government's own interest in economic and social development and the foreign investors' concern regarding returns on invested capital and assurances of raw material supply. In spite of difficulties, the success of such semi-public corporations as Friguia and CBG seem to confirm the soundness of this policy.

94. Finally, two very important factors in Guinea's mineral policy are the Government's desire to integrate the national mining industry and its intention to participate in the international marketing of the minerals produced and their derivatives. Although the desire to achieve integration was already reflected in the 1963 Investment Code, the requirement of integration has only become a strong element of the Government's policy in the last five years. In the bauxite sector, this clearly entails gradually giving priority to aluminium over alumina and to alumina over bauxite; exports of the latter are to be severely restricted in the future. National fabrication of aluminium will depend on availability of energy; production of alumina, the essential element, will be limited only by the world market. This policy underlies all current projects in the bauxite sector.

B. Basic principles governing semi-public corporations in the bauxite industry

95. The semi-public corporation is established by agreement between parties- the Government, referred to as partner A, and the foreign corporations, referred to as partner B. The agreement specifies all the criteria for the establishment and operation of the semi-public corporation and represents the law governing the parties in that it defines their respective rights and obligations. All semi-public corporation agreements are based on a number of fundamental and now traditional principles that are set out below.

1. Head office

96. The semi-public corporation shall be incorporated in Guinea and have its head office at Conakry.15/

15/ This principle may be affected by the legal difficulty concerning control of the semi-public corporation referred to in paragraph 83. CBG, for example, is legally a United States company incorporated in the state of Delaware and is merely registered in the Conakry Trade Register.

2. Registered capital

97. The final registered capital of the corporation shall be its actual funds and must be equivalent to a specified percentage of the investment, to be fixed by agreement between the parties. This is an improvement on the first semi-public corporations established in Guinea, whose registered capital was relatively modest. The initial registered capital must be an amount covering at least all expenditures prior to the construction phase of the project (prospecting, surveys and so on).

98. The Government acquires "A" shares in return for granting exploitation rights (mining concessions), handing over surveys already carried out and offering such other advantages as favourable long-term tax conditions and other guarantees. The "B" shares are subscribed by the foreign companies and issued against cash payment in proportion to their respective holding in the registered capital.

3. Structure

99. Although under the agreements establishing the Compagnie des Bauxites de Guinée (CBG) and the Friguia alumina company, the Government holds 49 per cent of the shares, the trend in new projects is to raise the Government's share to a minimum of 50 per cent. The other 50 per cent goes to foreign companies members of a consortium.

4. Administration and management

100. The corporation is administered by a Board made up of an equal number of representatives of partner "A" and of partners "B". The Chairman of the Board is appointed by the Government (partner "A") and the Vice-Chairman is appointed by the foreign companies (partners "B").

101. The day-to-day management of the corporation is in the hands of a Management Board comprising a General Manager appointed by the "B" partners and a Deputy General Manager appointed by the Government.

5. Tax regime

102. The tax regime is based on the provisions of the Investment Code. During the period of exploitation, Government revenue is generally derived from industrial and commercial profit tax (BIC); dividends accruing to "A" shares; and special levy on exports of the product. The BIC tax rate is 30 per cent of the net taxable profit.

103. As the Government is entitled to 50 per cent of the after-tax profit as return on its shareholdings, it ends up with 65 per cent of the net income of the semi-public corporation in the form of tax and dividends.

104. Any mineral product or derivative is subject to a tax known as the special export levy laid down by Act 010/AL/75. Under the Act, the export levy on one tonne of bauxite varies according to its quality (alumina contents) from 0.50 and 0.75 per cent of the Alcan price per metric ton of 99.5 per cent pure primary aluminium published in Metal Bulletin. For alumina, the levy is 1 per cent and for aluminium 0.20 per cent. The export levy is paid by buyers and not by the semi-public corporation.

105. It should be noted here that since 2.2 to 2.4 tonnes of average quality bauxite are required to produce one tonne of alumina, and 1.95 tonnes of alumina are required to produce one tonne of aluminium the levy is applied on a decreasing scale intended to encourage local processing of bauxite.

6. Transfer

106. The Government guarantees that "B" partners may transfer from Guinea profits accruing to them in the form of dividends free of tax.

7. Sharing of production

107. Since Guinea traditionally consumed neither bauxite nor alumina, the entire production of the corporation was distributed among "B" shareholders in proportion to their individual holdings. In the circumstances, only minor quantities were transferred to the Government on an ad hoc basis. The "take-and-pay" type of contract between the corporation and the "B" partners was generally desired by the Government. In present-day projects, however, because of its desire to participate in the international marketing of bauxite and alumina and/or the inability of the "B" partners to consume all projected production, the Government is willing to purchase a sizable part of the production for marketing. At present within the existing corporations CBG and Friguia, the Government has requested and secured from its partners the right to purchase 10 per cent of production.

8. Infrastructure

108. As an investment incentive for foreign companies, the Government takes responsibility whenever possible for providing basic infrastructure—railway, ports and company housing. In such cases, Government-owned basic infrastructure is rented to the semi-public corporation. However, when the volume of investment required for this purpose is too high, part of the basic infrastructure is owned by the corporation.

9. Investments

109. Apart from actual capital, the amount of investment required for carrying out the project is covered by loans from commercial banks and/or development institutions. The semi-public corporation does the borrowing, and the loans are doubly guaranteed, by the "B" partners individually, and by the Government.

10. Management and technical assistance contract

110. With Government approval, the "B" partners choose one of themselves as "lead" company, to act as operator at both the construction and the exploitation stages. A contract defining the operator's obligations and mode of remuneration is concluded for this purpose and annexed to the Agreement.

11. Shipping

111. In the Agreement establishing the semi-public corporation, the Government reserves the right to ship 50 per cent of the production itself.

C. Distribution of benefits

112. The bauxite mining companies have done a great deal through industrial installations, related basic infrastructure and permanent social facilities (hospitals, schools, social centres), to transform Guinea's natural landscape; they have also contributed to the country's development process and to the emergence of a new generation of Guineans with the skills needed for high technology enterprises and for the complex task of managing the bauxite industry. These factors cannot be quantified, but they constitute significant contributions.

113. The net quantifiable income of the semi-public corporations is divided between the transnationals and the Government according to provisions set out in the investment agreements. The Government's income under this sharing arrangement is called direct income, as opposed to indirect income from export and import levies and other taxes which is not directly related to the company's profits wages paid to nationals, re-invested profits and other local expenditures of the corporation constitute another form of benefit for the Government. Because of the existence of an independent currency zone in Guinea, the semi-public corporations purchase the local currency needed to cover local costs by transferring to the Central Bank of Guinea the equivalent in United States dollars. Thus in the absence of more detailed information, annual purchases of local currency (syli) 16/ are a fairly accurate reflection of the sum of import duties, miscellaneous taxes, wages and wage supplements of the Guinean workers and other local expenditures.

114. In table 10 below, the Government's earnings are shown as the sum of taxes, dividends due to it, the special export levy, one half of the import duties and other taxes. 17/ The income of the transnational companies is made up of the dividends received by the "B" partners.

115. The modest level of corporation earnings in comparision with those of the Government is not surprising: The farmers make substantial profits at the primary aluminium, semi-finished and finished products stages. Moreover, examination of the structure of the Government's earnings reveals that in 1981, for example, the special export levy - on which the profit position of the semi-public corporation has no bearing - accounted for 52.3 per cent of Government earnings in the case of Friguia and 70 per cent in that of CBG.

116. The conclusion to be drawn from this is clear: the basic factor which significantly altered the distribution of benefits between the Guinean

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16/ $US1 equals 22.626 sylis (30 June 1982)

17/ Unlike the special export levy, which is payable to the Government by the partners/purchasers of bauxite, the net value of import duties and other taxes received by the Government from the semi-public corporation actually amounts to only half of the amount paid, since the Government provides 50 per cent of it by virtue of its partnership in the semi-public corporation.

Table 10. Earnings Breakdown for Friguia and CBG
(Thousands of US dollars)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
I. Friguia									
Government	na	na	3821	7059	9059	9592	16059	21953	21210
Tax and dividends	na	na	0	0	0	0	2672	4278	5800
Special export levy	0	0	3821	6439	6308	7192	9027	11940	11092
Half of miscellaneous taxes (export, import administration)	na	na	na	620	2751	2380	4360	5735	4318
"B" partners	na	na	0	0	0	0	1439	2303	2500
Dividends	na	na	0	0	0	0	1439	2303	2500
II. CBG									
Government	na	na	31480	43035	85334	80717	97705	150892	161581
Tax and dividends	0	0	0	0	11781	10801	12177	33225	46901
Special export levy	0	0	31480	43062	72736	69033	84753	116487	113503
Half of miscellaneous taxes (import, turnover)	na	na	na	773	817	823	775	1190	1177
"B" partners	0	0	0	0	6344	5816	6557	17890	25254
Dividends	0	0	0	0	6344	5816	6557	17890	25254

Note: na - not available

Source: Consolidated financial statements (1975-1981) of Friguia, certified by Price Waterhouse, and reports to meetings of the Board of Directors.
Final statements for tax purposes and CBG financial statements (1973-1981), certified by Coop and Lyvrand.

Table 11. Data for Computing the Retained Value and the Internal Rate of Return - Friguia (Thousands of US Dollars)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
Inflows									
Net capital assets*	na	na	75676	63320	59721	55680	52432	48103	41722
Tax and dividends (government)	na	na	0	0	0	0	2672	4270	5000
Special export levy	0	0	3821	6439	6908	7182	9027	11940	11092
Miscellaneous taxes	na	na	na	1241	5503	1760	8721	11469	8626
Reinvested profits	na	na	0	0	0	0	0	492	3000
Wages and wage supplements of Guinean workers	na	na	na	na	7294	9325	7186	7484	6928
Outflows									
Debt servicing(principle and interest)	na	na	7340	13618	8735	8866	9976	8351	8324
"B" partners' dividends	na	na	0	0	0	0	1439	2303	2500
Salaries and Salary supplements of expatriate personnel	na	na	na	na	1501	2945	2525	2911	2694

Note: na - not available.
(*)- The Government did not participate in the financing of the project and does not yet participate in the shipping of alumina.
(**)- Financial year of 15 months.

Source: Certified consolidated financial statements and reports to the Directors.

Table 12. Data for Computing the Retained Value and Internal Rate of Return, CBG (Thousands of US Dollars)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
Inflows									
Net capital assets									
CBG semi-public corporation	na	na	na	153189	145191	132725	117495	110995	103519
Government OFAB (basic infrastructure) *	110000	104500	99000	93500	88000	82500	77000	71500	66000
Tax and dividends, Government	0	0	0	0	11701	18601	12177	33224	46901
Special export levy	0	0	31420	43062	72736	69033	94753	116407	113503
Miscellaneous taxes	na	na	na	1546	1635	1765	1550	2300	2354
Reinvested profits	0	0	0	0	4695	2404	8928	16949	6011
Wage and wage supplements of Guinean workers	na	na	na	na	na	5417	6002	7269	8165
Government income from shipping of bauxite	0	0	1233	1612	813	141	655	441	603
Outflows									
Debt servicing (principle & interest)									
CBG semi-public corporation	na	na	28460	27560	30036	38109	35104	32779	33796
Government OFAB (infrastructure)	0	0	0	0	4722	4321	4871	13290	18760
"B" partners' dividends	0	0	0	0	6344	5816	6557	17090	25254
Salary and salary supplements of expatriate personnel	na	na	na	5717	6936	5717	6936	7140	8030

Note: na - not available.
(*)- Basic infrastructure financed by the Government (Office d'Aménagement de Boké-OFAB). The linear depreciation over a 20 year period used does not correspond to that used in the port railway agreement.
(**)- Financial year of 15 months.

Source: Certified consolidated financial statements and final tax declarations.

Government and the transnationals was the promulgation in 1975 of Act. No. 010/AL/75; this established the special export levy on mineral products and their derivatives. The special export levy was introduced not through re-negotiation of agreements with the semi-public corporations but as a sovereign act of the Government. The purpose of negotiations which followed with the partner transnationals was to work out practical accounting and payment procedures for the special levy. These procedures were spelled out in an addendum to the bauxite and alumina sales contracts.

117. Given the semi-public corporation structure of TNCs dealing in aluminium in Guinea and the specific manner in which the Government participates in these semi-public corporations, the Mikesell model for the concept of retained value in the distribution of benefits cannot be applied in its original form. Instead of making modifications which might subsequently prove to be irrelevant to the subject of this study, it was deemed preferable to set out in tables 11 and 12 all available data which might be necessary for calculating the retained values arising from the operations of Friguia and CBG. In the case of Friguia, the Government financed none of the infrastructure whereas in the case of CBG, funds borrowed by the Government are repaid from the 65 per cent of CBG profits which it receives.

D. Bargaining factors that affect distribution of benefits

118. In assessing the comparative benefits of the Government and transnationals in the semi-public bauxite corporations in Guinea, one cannot fail to note the relative advantage of the Government, an advantage which has been consolidated since 1975 when the special export levy on mineral products and their derivatives was instituted. It stems from the Government's exercise of its bargaining strength. Factors responsible for this situation are both internal, associated with the characteristics of bauxite, the bauxite industry and the bauxite market, and external connected with the effects of international institutions. The following paragraphs discuss some of the main factors which have helped to improve the Government's bargaining strength.

119. Attention must first be drawn to the political authorities who with a minimum of information about transnational corporations, their *modus operandi* and the international market for bauxite and products derived from it, had the foresight to establish an appropriate climate for investment and to work out with the transnational corporations novel yet basic principles which preserved the balance of mutual interests. Because of this policy and despite both the French Government's attempted boycott and the non-capitalist ideological orientation of new *regime* in Guinea, the major transnational corporations were sufficiently confident not only to complete the Fria project 18/ which was already under way but also to undertake the new Boké project. The success of Fria, later Friguia, and CBG led to the emergence of new and more suitable technical, economic, financial, legal and administrative capabilities which have increased the Government's bargaining power.

120. Bauxite quality and the size of reserves are prime considerations in the view of TNCs: the lifetime of a mine determines the stability of supply to the refinery to which it is attached; the quality of the bauxite for its part determines processing costs. The quality of Guinea's bauxite, especially in

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18/ It is true that, in the case of Fria, all the equipment had already been ordered and much of it was already being assembled.

the Boké region bauxite which has the best ore in the world, and the country's enormous reserves have strengthened the Government's negotiating position vis-à-vis transnational corporations interested in cost and stragegy objectives.

121. The Government was quick to grasp the structure of the bauxite industry and market; familiarity with these issues led to two conclusions. First, its partners - all transnational corporations with a high degree of vertical and horizontal integration - were not particularly concerned with profits at the bauxite and alumina stages, secondly to renegoiate prices, with only 65 per cent of the increase going to the Government, would not bring about a substantial increase in earnings. 19/ The bauxite-based Bayer process is an old but improved technology which has been used for over a century for ever larger capacities; it has a clear advantage as regards investment per ton of installed capacity over the new technologies - the H-Plus process using clays and shales, the nitric acid process, the hydrochloric acid or chloric acid process using kaolin, the caustic soda process using nepheline or anorthosite, and others. Furthermore, the average energy consumption of these new processes ranges from 8,000 to 13,000 kilocalories per ton of alumina as compared with 3,500 for the bauxite-based Bayer process. This means that the energy costs or oil equivalent costs, are very high, ranging from $US 71 to $US 115 per ton of alumina as against US$ 31 per ton with the bauxite-based Bayer process. 20/ Accordingly, given the fact that bauxite represents a small component in the cost of aluminium and because of the immensity of world reserves, taxes on the bauxite consumed by transnationals are not at present a decisive factor in finding substitutes for bauxite. This assessment is confirmed by the fact that the Soviet Union, a pioneer in this field, has converted some of its nepheline-based processing plants to operate on bauxite. However, as the price of bauxite to the consumer increases, greater attention should be paid to this element.

122. A more significant limiting factor is changing the source of supply of bauxite. It is commonly accepted that in the short term, elasticity in demand for bauxite in relation to its price is quite small. This is due to the fact that alumina refineries are generally built to process bauxite of a given type from a given mine, from two mines if they are mixed or if there are two lines of digesters. Because of the wide range of types of bauxite in the world, demand exists not for a single but for specific types of bauxite. Accordingly, when the price of bauxite changes, a given alumina plant cannot switch immediately to a different type of bauxite because of the cost of and time required for conversion, elements which do not apply in the case of alumina.

123. For both bauxite and alumina an increase in the cost of delivery may in the longer run lead the consumer to reduce his supply from the more expensive source and increase his supply from cheaper sources. In these extreme circumstances, the fixed assets factor alone prevents the consuming transnational companies from shutting down bauxite and alumina capacities which they own in high-taxation countries: most TNCs have deversified their sources of supply as a matter of investment policy so as to be able to manipulate them in a way that minimizes risks of unusual price rises and/or interruption in supply.

19/ There has been only one renegotiation of prices in CBG when the price of bauxite increased by $US 2 in 1976 following a recommendation by the International Bauxite Association concerning the minimum price.

20/ Light Metals, 1966, Vol, 2, AIME

124. Likewise, in the cases of both bauxite and alumina, the host country may refrain from utilizing its bargaining power in the short term for fear of discouraging further investments. Thus competition among countries with bauxite reserves for future investments weakens their bargaining power

125. In the case of Guinea the Government's power to bargain for an increase in earnings was due in part to knowledge on how the costs of Guinean bauxite and alumina compared with those of other available supplies. It also stemmed from the nature of the "take-and-pay" contracts for bauxite and alumina under which CBG's and Friguia's partner-consumers were required to remove and pay for almost all the output.

126. Finally, it should be noted that in Guinea as in other third-world countries, assistance from financing organizations and in particular the World Bank have in many cases helped to strengthen the Government's bargaining position during the development phase of a project. The World Bank repeatedly sided with the Guinean Government in its negotiations with transnational corporations on the Boké project and made available the expertise of its staff. Moreover, in two new iron ore and aluminium projects in Guinea, while virtually acting as arbitrator between the Government and foreign partners in the critical appraisal of the feasibility studies, the World Bank, sometimes supported the Government's position even more strongly than had been expected. Although disagreements do arise, on the whole, private and particularly financial institutions, through provision of expertise, have enabled the governments of developing countries to familarize themselves with increasingly sophisticated aspects of negotiations with transnational corporations and have thereby improved their bargaining power.

CHAPTER VI

CONCLUSIONS

127. In the polarized situation of the bauxite industry, fundamental factors clearly exist which affect the bargaining power of transnational corporations and host countries; interaction determines the distribution of the benefits derived from the industry. The key factors favouring each side are enumerated in summary form below.

128. Four factors tend to favour transnational corporations:

(a) Transnational corporations operating in the bauxite industry are, for the most part, highly integrated and, with regard to ownership, dominate the world industry;

(b) Transnationals control the market from bauxite to primary aluminium and its semi-finished products, most of the consumption of which is concentrated in the developed countries;

(c) The major transnational corporations are so few that consultations are facilitated; this enables TNCs to take concerted decisions, even though United States transnationals categorically deny this in view of the anti-trust laws;

(d) Transnationals have a monopoly of bauxite processing know-how and technology and own or have access to the sizeable financial resources required for the mining and processing of bauxite.

129. Host countries for their part, enjoy two advantages:

(i) The host countries, almost all of which are developing countries, are the sole owners of the world's bauxite resources;

(ii) The developing host countries are almost the sole source of the bauxite and alumina flows entering into international trade.

130. The imbalance in bargaining power in favour of transnationals is obvious, inasmuch as host countries are incapable of concerted decision-making on the development of the bauxite industry or on increasing earning from that part of the industry which is located within their national territory. The situation could be reversed if all host countries, deeming it politically acceptable, were to agree on practical measures to increase their earnings by, for example, a uniform tariff policy. Even though the transnationals would probably take compensatory measures at the semi-finished and finished products level in that event, host countries would not be alone in assuming resulting costs.

131. On the basis of experience within the International Bauxite Association, the establishment of an effective uniform tariff policy cannot be expected in the foreseeable future; there are, however, a number of courses of action open to host countries gradually to enhance bargaining power vis-à-vis transnationals. Countries can:

(a) Utilize existing forums (IBA, UNCTAD and others) whenever possible, with a view to having extensive communications and exchanges of experiences on clearly identified problems such as integration of the industry in the host countries, forms of participation by host country Governments in the industry, different appraoches to enhancing the benefits of host countries, etc.;

(b) On the basis of information obtained, individually take suitable participation and/or fiscal measures to enhance Government benefits;

(c) Create national structures (commission, institute, special office) staffed with persons with the necessary skills for negotiation with transnationals;

(d) Use international development and financing institutions to promote the development of own energy resources, a prerequisite for the integration of the industry;

(e) Promote the expansion of domestic consumption of aluminium through identification of new uses with a view gradually to reduce concentration on external markets of their bauxite industries

132. Realistically, the process to implement such measures would be lengthy, owing to the power of the transnational corporations which dominate the bauxite industry. Significant changes which have occurred in the industry over the last quarter century, in particular with regard to the distribution of benefits and the siting of new aluminium capacities, make it possible, however, to predict even more rapid changes in future in favour of developing countries, provided that they show foresight and perseverance.